Liyi (Shelley) Xu

✉ liyix@andrew.cmu.edu   ⌂ https://xuliyi0112.github.io/

RESEARCH INTERESTS

Design Research, Human-AI Interaction, Social Computing, Accessibility, VR/AR, Learning Sciences

EDUCATION

Carnegie Mellon University, School of Computer Science   *Aug. 2024 - Aug. 2025(expected)*
Master of Educational Technology and Applied Learning Sciences   Pittsburgh, PA

Nanjing University of the Arts, School of Design   *Sep. 2020 - Jun. 2024*
B.F.A in Visual Communication Design | Specialization in Digital Media Arts   Nanjing, China
Cumulative GPA: 3.9/4.0, with Distinction

PUBLICATIONS

Conference

[c.3] Kexin Bella Yang*, Menghan Liu*, **Liyi Xu***, Nikol Rummel, Vincent Aleven. **Balancing Teacher and Student Agency: Control Distribution in Co-Orchestration Tools for Dynamically Combining Individual and Collaborative Learning** *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '25) Work Under Review*

[c.2] Jingze Tian*, Yingna Wang*, Keye Yu, **Liyi Xu**, Junan Xie, Franklin Mingzhe Li, Yafeng Niu, Mingming Fan. **Designing Upper-Body Gesture Interaction with and for People with Spinal Muscular Atrophy in VR** *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24)*

[c.1] Yuru Huang, **Liyi Xu***, You Zhou*, Qiongyan Chen, Zhiqing Wu, Li Feng, Mingming Fan. **Toward Leveraging Augmented Reality (AR) for Enhancing Remote Intergenerational Communication in Cooking Scenarios** *In the Proceedings of the Eleventh International Symposium of Chinese CHI (CHCHI '23)*

RESEARCH EXPERIENCE

Carnegie Mellon University, Advised by Vincent Aleven   Pittsburgh, PA
Research Assistant   *Jun. 2024 - Present*

• **AI tools balancing teachers and students' agency and control**
  ▪ Literature review/ Data classification and research/ Paper writing

  ▪ Our research highlights education technology and HCI, especially on how we can design co-orchestration tools that seek to balance the respective agency and control of teacher and students.

Northeastern University, Advised by Maitraye Das   Boston, MA
Technology, Equity, and Accessibility Lab | Research Assistant   *Jun. 2024 - Present*

• **Practices and Challenges of the Travel Experiences and Communication of the Deaf and Hard of Hearing Community**

  ▪ As one of the lead researchers, I study the barriers faced by deaf and hard-of-hearing(DHH) individuals when traveling independently or in groups (including groups with hearing individuals),

the motivations that drive them to overcome these barriers to travel, and how DHH travelers currently cope with and manage communication and accessibility challenges during their journeys. From this research, I hope to gain insights into how Information and Communication Technology (ICT) can enhance the travel experiences of the DHH community.

- **Enhancing Oral Language Rehabilitation for Cochlear Implant Children through ICT Technologies**

  ▪ This study aims to explore the challenges and difficulties that parents face in the oral language rehabilitation training of children with cochlear implants within a home education setting. The research will also analyze the functionalities that current information and communication technologies (ICT) can offer to support and assist parents in managing their child's oral language training.

HKUST(GZ), Advised by Mingming Fan   Guangzhou, China
Accessible & Pervasive User EXperience Lab | Research Assistant   *Jun. 2023 - Jan. 2024*

- **Assistive technology design in VR for SMA people & Upper Limb Rehabilitation**

- **Human-Food Interaction in AR to improve intergenerational communication**

  [c.1] [c.2] ▪ Synthesized insights from 100+ scholarly articles on accessibility, inclusive design, VR/AR, etc., employing both qualitative and quantitative analysis methods to develop a comprehensive understanding that informed our research direction and methodology.

  ▪ Recruited 50+ patients and conducted 40+ user experiments; Utilized MAXQDA and Python for data analysis.

  ▪ Visualized upper-body gestures for 26 VR commands and collected 312 user-defined gestures for users with varying motor abilities.

Nanjing University of the Arts, Advised by Jie Jiang   Nanjing, China
School of Design|Undergraduate Researcher   *Jun. 2022 - Jun. 2022*

- **Design Empowering Rural Revitalization**

  ▪ Performed 30+ in-depth field studies and analyzed data from 3,000+ questionnaires using SPSS. Provided actionable recommendations to identify and drive opportunities for the product roadmap, which received accolades from the local government.

  ▪ Led an interactive design project for a museum digital exhibition and website using Figma, Unity, and C4D, resulting in a 40% increase in visitor engagement and a 30% boost in online traffic.

  ▪ and won a top competition in China (The 18th Challenge Cup National College Student Curricular Academic Science.

Tsinghua University, Advised by Keyang Tang   Beijing, China
Space and Media Group at The Future Laboratory|Undergraduate Researcher   *Nov. 2022 - Dec. 2022*

- **AI tools in balancing teachers and students' agency and control**
  ▪ Conceptualized and crafted an environmentally-conscious VR interactive environment prototype for children, focusing on nurturing environmental awareness education and fostering spatial imagination, captured the interest of a diverse group of children.

Nanjing University of the Arts, Advised by Di Ye   Nanjing, China
School of Dance | Undergraduate Researcher   *Apr. 2022 - Dec. 2023*

- **The Spread of Intangible Cultural Heritage Dance, Provincial Entrepreneurship Program**
  ▪ Conducted 6 field surveys with reports totaling over 5,000 words, compiled six document archives of

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approximately 2,500 words, collected 669 photos, recorded 90 video clips (198 minutes), and created over 40 original hand-drawn meticulous paintings.

PROFESSIONAL EXPERIENCE

Bosch (China) Investment Ltd.   Shanghai, China
UX & Service Design Intern   *Feb. 2023 – May. 2023*

▪ Spearheaded the creation of the 'UX SPACE' for the Global Service-Shanghai team with product manager, resulting in a successful launch and drawing 500+ visitors, elevated the department's prominence within the company and forged partnerships with design consulting firms.

▪ Strategized for the product direction by leveraging the findings of users' preference and concerns from desk research, user interview and survey to shape business decisions during 3 workshops with the inner cooperation team.

Nanjing Sunsite Advertising CO., Ltd.   Nanjing, China
UX & Visual Design Intern   *May. 2022 – Aug. 2022*

▪ Established 10+ visual design solutions and brochure guidelines for Delixi Electrical Co., engaging with B2C stakeholders.Nanjing Sunsite Advertising CO., Ltd.

URBAN CONSTRUCTION TUNNEL & BRIDGE   Nanjing, China
UX & Visual Design Intern   *Mar. 2022 – Jun. 2022*

▪ Guided a team of 3 directors and led a 0-1 tunnel system management interface design to support tunnel engineers to manage and investigate incidents in tunnel traffic lights and signals within Nanjing, thereby reducing tunnel engineers' solving incident time by 20%.

BANANA Art Space & AMNUA   Nanjing, China
Visual Design & Curatorial Intern   *Dec. 2021 – Jul. 2022*

▪ Designed the main visual promotional posters for curating more than five art exhibitions, collectively drawing in 10,000+ visitors.

SELECTED HONORS AND AWARDS

Muse Design Award in Product Design - Educational Tools   *Apr. 2024*
Honored with Silver Award among Professional Group, invited and reported the interview.

The 18th Challenge Cup College Student Curricular Academic Science of China *Jun. 2023*
Group project: Selected from over 30,000 projects to become one of the 446 finalists and won the second prize.

Liu Haisu Scholarship, NUA(top 0.06%, highest honor at NUA)   *Jan. 2023*
Honor for top 7 among 12000+ students with the title of most distinguished Student, also received a $1100 scholarship for outstanding comprehensive accomplishments.

SERVICES

Student Volunteer
1ST EDITION OF CHINA ART STUDIES 50 FORUM 2020: Proceed to the in-person conference in more than 12 hours, guiding and arranging the entrance order for the participants

SKILLS

Language

Chinese(Native), English(Full professional proficiency, TOEFL 109, GRE 334), Cantonese(Beginner)

Programming and Development

Product Development : Processing, Arduino, C#, C, Javascript, Touch Designer, html

Data Processing : Python, Excel

Design and Media Creation

Adobe : Photoshop, Illustrator, After Effects

UI tool : Figma, Miro

Modeling tool : Keyshot, Rhino, Cinema 4D, Unity, Blender

Word editing : Latex

Video editing: Capcut

Certificate

HarvardX CS50x-CS50's Introduction to Computer Science

Python Data Structures

Programming for Everybody (Getting Started with Python)

EXTRACURRICULAR ACTIVITIES

Chinese Intellectual Property Rights - Youths Volunteer Work   *Jul. 2022 - Aug. 2022*

A member of Jiangsu team, involed in more than 54 hours.

NUA Undergraduate Student Union   *Nov. 2021 - Dec. 2022*

A member of the 2020-2021 Center Executives, affiliated with the Learning Development Department.